

ABSTRACT

Methods, systems, and computer programs for determining motion vectors in a motion-compensated video compression system. In one aspect, multiple fast motion estimation methods are applied to a set of video images, with the best result from all of the matches selected for use in compression. Both AC and DC motion vector match criteria can be applied. In addition to full-pixel searches commonly used by these methods, sub-pixel searches can also be performed for each candidate motion vector, using both AC and DC match criteria. Further, hybrid combinations of full-pixel and sub-pixel fast searches can be used. Other aspects of the invention include the use of an AC match for determining motion vectors in a motion-compensated compression system; comparison of an AC match with a DC match, and selection of the best match for use in motion-compensated compression; use of the best match (AC or DC) to improve determination of motion vectors in wide dynamic range and wide contrast range images; and scaling (increasing/decreasing) AC frequency components in an AC matching process.